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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/723,728 | 11/26/2003 | Prathyusha K. Salla | 139947YOD GEMS:0257 | 9781 |

7590 02/12/2007
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| EXAMINER |
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LAMPRECHT, JOEL

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| ART UNIT | PAPER NUMBER |
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3737

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 02/12/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/723,728 | Applicant(s) SALLA ET AL. | |
| | Examiner Joel M. Lamprecht | Art Unit 3737 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4, 6-10 14-17, 19-23, 27-30, 32-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Chassaing et al. (US 6,278,890). Chassaing et al. thoroughly disclose the acquisition of motion data from a plurality of sensors (Col 7 line 55-65), measuring motion along all axes of a three-dimensional coordinate system and validating data (Col 18 Line 10-67), imager data is used to segment the data and provide a baseline for moments derived from components of sensors (Col 18 Line 50-67), deriving reconstructed image data (Col 13 Line 45 – Col 18 Line 18 discusses the entirety of workstation processing and vectoring) (Fig 41 for FFT and freq data, 42 for beamforming). The motion data is derived from a set of acquisition data, and is both a sensor based methodology incorporating accelerometers or other strain/force sensors (Col 3 Line 45-55, Fig 40) which uses data from acquisition data to perform windowing and other processing functions to acquire motion data and motion images of the regions of interest (Example 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chassaing et al. (US 6,278,890) in view of Hushek (5,810,729). Chassaing et al teach the invention as claimed including acquisition of motion data from a plurality of sensors (Col 7 line 55-65), measuring motion along all axes of a three-dimensional coordinate system and validating data (Col 18 Line 10-67), using imager data to segment the data and provide a baseline for moments derived from components of sensors (Col 18 Line 50-67), deriving reconstructed image data (Col 13 Line 45 – Col 18 Line 18 discusses the entirety of workstation processing and vectoring) (Fig 41 for FFT and freq data, 42 for beamforming). The motion data is derived from a set of acquisition data, and is both a sensor based methodology incorporating accelerometers or other strain/force sensors (Col 3 Line 45-55, Fig 40) which uses data from acquisition data to perform windowing and other processing functions to acquire motion data and motion images of the regions of interest (Example 2).

3. Chassaing et al. do not disclose the use of a set of preacquisition data, rather they teach the cross-correlation of acquisition data, and do not teach the use of a data-based methodology for determination of motion, wherein the Examiner defines a data-based methodology as a methodology which requires the use of a pre-acquisition image (such as a navigator image as disclosed). Attention is then directed to the secondary reference by Hushek in the same field of endeavor which teaches the use of navigator pre-acquisition images and data in the reconstruction of MRI data for a moving body

part (Col 4 Line 20 – 48). The acquisition and use of navigator data is then used in conjunction with image data (Fig 4, Col 4 Lin 50-67) to reconstruct an image of the motion of the body part. It would have been obvious to one having normal skill in the art to have used a data-based navigator acquisition image system as taught by Hushek et al. in the motion image acquisition system of Chassaing et al. to incorporate reference data into the three-dimensional reconstructions of motion vectors and data for imaging.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is listed on the attached reference sheet.


4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joel M. Lamprecht whose telephone number is (571) 272-3250. The examiner can normally be reached on Monday-Friday 7:30AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on (571)272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3737

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JML
2/1/07



EILEEN MESSINGER
SUPERVISORY PATENT EXAMINER